Mawlana Bhashani Science And Technology University

Lab-Report

Report No : 09

Course Code : ICT-3110

Course Title : Operating System Lab.

Date of Performance :

Date of Submission : 30/09/2020

Submitted By:

Name: Md.Mehedi Hasan Tipu

ID:IT-18046

3rd Year 1st Semester

Session : 2017-18

Dept. of ICT

MBSTU

Submitted To:

Nazrul Islam

Assistant Professor

Dept. of ICT

MBSTU

Priority Based Scheduling

- Priority scheduling is a non-preemptive algorithm and one of the most common scheduling algorithms in batch systems.
- Each process is assigned a priority. Process with highest priority is to be executed first and so on.
- Processes with same priority are executed on first come first served basis.
- Priority can be decided based on memory requirements, time requirements or any other resource requirement.

Given: Table of processes, and their Arrival time, Execution time, and priority. Here we are considering 1 is the lowest priority.

Process	Arrival Time	Execution Time	Priority	Service Time
P0	0	5	1	0
P1	1	3	2	11
P2	2	8	1	14
P3	3	6	3	5

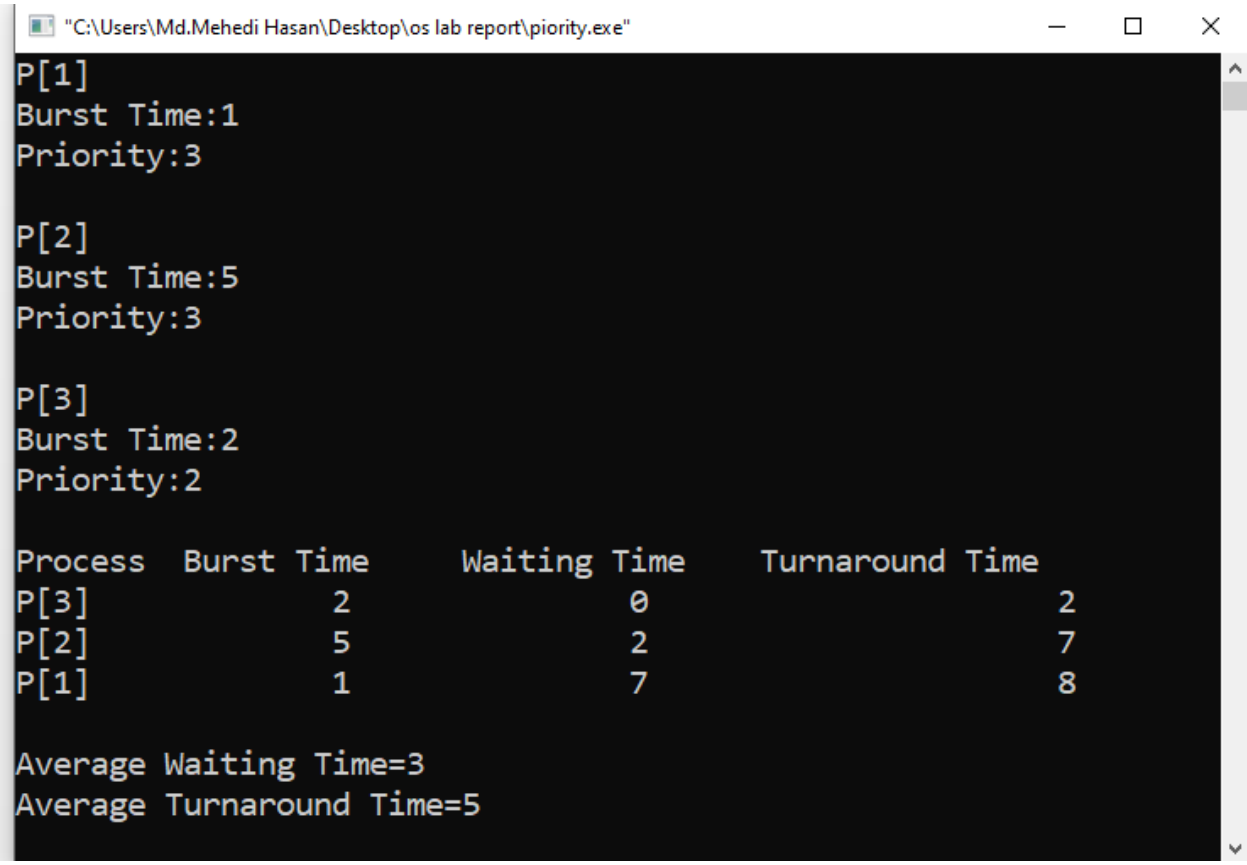
Code implementation:

```
#include<stdio.h>

int main()

{
```

```
int bt[20], p[20], wt[20], tat[20], pr[20],i,j,n,total=0,pos,temp,avg_wt,avg_tat;
printf("Enter Total Number of Process:");
scanf("%d",&n);
printf("\nEnter Burst Time and Priority\n");
for(i=0; i<n; i++)
{
   printf("\nP[%d]\n",i+1);
   printf("Burst Time:");
   scanf("%d",&bt[i]);
   printf("Priority:");
   scanf("%d",&pr[i]);
   p[i]=i+1; //contains process number
}
for(i=0; i<n; i++)
{
   pos=i;
   for(j=i+1; j<n; j++)
   {
      if(pr[j]<pr[pos])
         pos=j;
   }
   temp=pr[i];
   pr[i]=pr[pos];
   pr[pos]=temp;
   temp=bt[i];
   bt[i]=bt[pos];
   bt[pos]=temp;
   temp=p[i];
   p[i]=p[pos];
```

```
        p[pos]=temp;
    }
    wt[0]=0; //waiting time for first process is zero
//calculate waiting time
    for(i=1; i<n; i++)
    {
        wt[i]=0;
        for(j=0; j<i; j++)
            wt[i]+=bt[j];
        total+=wt[i];
    }
    avg_wt=total/n; //average waiting time
    total=0;
    printf("\nProcess\t Burst Time \tWaiting Time\tTurnaround Time");
    for(i=0; i<n; i++)
    {
        tat[i]=bt[i]+wt[i]; //calculate turnaround time
        total+=tat[i];
        printf("\nP[%d]\t\t %d\t\t %d\t\t\t%d",p[i],bt[i],wt[i],tat[i]);
    }
    avg_tat=total/n; //average turnaround time
    printf("\n\nAverage Waiting Time=%d",avg_wt);
    printf("\nAverage Turnaround Time=%d\n",avg_tat);
    printf("\n");
    return 0;
}
```

Output:



Discussion:

Priority scheduling is a non-preemptive algorithm and one of the most common scheduling algorithms in batch systems. Each process is assigned a priority. Process with highest priority is to be executed first and so on. Processes with same priority are executed on first come first served basis.